

SUBCHAPTER A : EFFLUENT LIMITATIONS

§309.1. Scope and Applicability.

(a) The purpose of these sections is to promulgate a set of effluent quality limitations for treated domestic sewage which will be required of permittees as appropriate to maintain water quality in accordance with the commission's surface water quality standards. Any incorporation of federal regulations into this chapter shall apply only to disposal of domestic sewage.

(b) Secondary treatment, with exceptions applicable to certain oxidation pond systems, is defined as a reduction of pollutants to the following quality:

Biochemical Oxygen Demand (BOD), 5-Day (milligram per liter, mg/l)	
30-Day Average	20
7-Day Average	30
Daily Maximum	45
Single Grab	65
Total Suspended Solids (TSS) (mg/l)	
30-Day Average	20
7-Day Average	30
Daily Maximum	45
Single Grab	65
Dissolved Oxygen (DO) (mg/l)	
Single Grab (minimum)	2
pH (Standard Units)	
Within limits of 6.0 - 9.0	

(c) Effective April 1988, all permits containing an ammonia nitrogen effluent limit are hereby modified to change BOD₅ to carbonaceous biochemical oxygen demand (CBOD₅).

(d) Effective January 1, 1988, any permit containing a BOD₅ effluent limitation may be monitored and reported as CBOD₅ as long as nitrogen is monitored and reported as ammonia-nitrogen at the same sampling frequency. If the permit authorizes a discharge to land or an evaporation pond only, ammonia-nitrogen monitoring and reporting are not required to change to CBOD₅.

(e) The State of Texas has established a State Water Quality Management Program and a continuing planning process which sets forth the strategy and procedures for accomplishing the management program's objectives. Essential elements of the program include updates of basin plans and wasteload evaluations by basin segments. In order to achieve compliance with water quality

standards within certain segments, more stringent effluent quality limitations other than basic secondary treatment may be required to protect water quality.

§309.2. Rationale for Effluent Sets.

(a) The effluent sets in §309.4 of this title (relating to Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants) are intended to represent standard levels of treatment normally required for domestic wastewater treatment plants.

(b) Modifications to the uniform sets of effluent criteria listed in §309.4 of this title (relating to Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants) may be considered by the commission when effluent limits more stringent than secondary treatment are required in order to maintain desired water quality levels.

§309.3. Application of Effluent Sets.

(a) Discharges into effluent limited segments.

(1) All discharges into effluent limited segments shall, at a minimum, achieve secondary treatment. An effluent limited segment is any segment which is presently meeting or will meet applicable water quality criteria following incorporation of secondary treatment for domestic sewage treatment plants and/or best practicable treatment for industries.

(2) New or increased discharges into effluent limited segments shall achieve that level of treatment deemed necessary by the commission, based on the assimilative capacity and uses of the receiving stream.

(b) Discharges into water quality limited segments.

(1) All discharges into water quality limited segments for which wasteload evaluations have been developed shall, at a minimum, achieve the treatment level specified in the recommendations of the wasteload evaluation for that discharge. In the event that analyses indicate that different treatment levels are required due to changed conditions or other factors, the commission may consider alternate treatment levels on a case-by-case basis. A water quality limited segment is a surface water segment classified by the commission as water quality limited where conventional treatment of waste discharged to the segment is not stringent enough for the segment to meet applicable water quality standards; monitoring data have shown significant violations of water quality standards; advanced waste treatment for point sources is required to protect existing exceptional water quality; or the segment is a domestic water supply reservoir.

(2) Discharges into water quality limited segments for which wasteload evaluations have not been performed shall, at a minimum, achieve secondary treatment.

(c) Discharges into certain reservoirs. Any discharge made within five miles upstream of a reservoir or lake which is subject to onsite/private sewage facility regulation adopted pursuant Texas

Solid Waste Disposal Act, Article 4477-7e, or which may be used as a source for public drinking water supply shall achieve, at a minimum, Effluent Set 2 in §309.4 of this title (relating to Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants). Five miles shall be measured in stream miles from the normal conservation pool elevation. The commission may grant exceptions to this requirement where it can be demonstrated that the exception would not adversely impact water quality.

(d) Discharges from oxidation ponds. Effluent Set 3 shall apply to oxidation pond facilities in which oxidation ponds are the primary process used for secondary treatment and in which the ponds have been designed and constructed in accordance with applicable design criteria. Effluent Set 3 is considered equivalent to secondary treatment for oxidation pond systems.

(e) Discharge to an evaporation pond. Effluent discharged to evaporation ponds must receive, at a minimum, primary treatment, be within the pH limits of 6.0-9.0 standard units and have a quality of 100 mg/l BOD₅ or less on a grab sample. For the purpose of this subsection, primary treatment means solids separation which is typically accomplished by primary clarifiers, Imhoff tanks, facultative lagoons, septic tanks, and other such units.

(f) Land disposal of treated effluent. The commission may authorize land disposal of treated effluent when the applicant demonstrates that the groundwaters or surface waters in the state will not be adversely affected. Each project must be consistent with laws relating to water rights. The primary purpose of such a project must be to dispose of treated effluent and/or to further enhance the quality of effluent prior to discharge.

(1) When irrigation systems ultimately dispose of effluent on land to which the public has access, Effluent Set 6, at a minimum, shall apply. The pH shall be within the limits of 6.0-9.0 standard units unless a specific variance is provided in the permit based upon site specific conditions. When lands to which the public does not have access are to be used for ultimate disposal of effluent, the effluent must, at a minimum, receive primary treatment. Effluent Set 7 shall apply and the pH shall be within the limits of 6.0-9.0 standard units unless a specific variance is provided in the permit based upon site specific conditions. For irrigation systems, primary treatment is the same as described in subsection (e) of this section. Effluent may be used for irrigation only when consistent with Subchapters B and C of this chapter.

(2) When overland flow systems are utilized for effluent treatment, the public shall not have access to the treatment area. Primary treated effluent meeting Effluent Set 8, within the pH limits of 6.0-9.0 standard units may be used consistent with environmental safeguards and protection of ground and surface waters. For overland flow systems, primary treatment is the same as described in subsection (e) of this section. At a minimum, Effluent Set 1 shall apply to discharges from overland flow facilities except where more stringent treatment levels are required to meet water quality standards.

(3) When evapotranspiration beds and subsurface drain fields are utilized for land disposal systems, the effluent shall, at a minimum, receive primary treatment and meet Effluent Set 9. Use of evapotranspiration beds and subsurface drain fields shall be consistent with environmental

safeguards and the protection of ground and surface waters. For evapotranspiration beds and subsurface drain fields, primary treatment is the same as described in subsection (e) of this section.

(g) Disinfection.

(1) Except as provided in this subsection, disinfection in a manner conducive to the protection of both public health and aquatic life shall be achieved on all domestic wastewaters which discharge into waters in the state. Any appropriate process may be considered and approved on a case-by-case basis.

(2) Where chlorination is utilized, any combination of detention time and chlorine residual where the product of chlorine (Cl_2 mg/l) X Time (T minutes) equals or exceeds 20 is satisfactory provided that the minimum detention time is at least 20 minutes and the minimum residual is at least 0.5 mg/l. The maximum chlorine residual in any discharge shall in no event be greater than four mg/l per grab sample, or that necessary to protect aquatic life.

(3) Except as provided herein, disinfection of domestic wastewaters which are discharged by means of land disposal or evaporation pond shall be reviewed on a case-by-case basis to determine the need for disinfection. All effluent discharged to land to which the public has access must be disinfected and if the effluent is to be transferred to a holding pond or tank, the effluent shall be rechlorinated to a trace chlorine residual at the point of irrigation application.

(4) Unless otherwise specified in a permit, chemical disinfection is not required for oxidation ponds when the total retention time in the wastewater treatment system (based on design flow) is at least 21 days.

(h) More stringent requirements. The commission may impose more stringent requirements in permits than those specified in subsections (a)-(g) of this section, on a case-by-case basis, where appropriate to maintain desired water quality levels.

§309.4. Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants.

This table contains the sets of effluent criteria for waste discharge permits.

Table 1
Effluent Limitations for Domestic Treatment Plants

		30-Day Average			7-Day Average			Daily Maximum			Single Grab			
Set	Direct Discharge	BOD ₅			TSS			BOD ₅			TSS			DO MIN
1	Secondary treatment	20			20			30			30			2
2	Enhanced secondary treatment	10			15			15			25			4
3	Oxidation ponds	30			90			45			--			--
<u>Land Treatment/Disposal</u>														
6	Irrigation (public exposure)	--			--			--			--			--
	Using oxidation pond	--			--			--			--			--
7	Irrigation (no public exposure)	--			--			--			--			--
8	Overland flow (applied effluent)	--			--			--			--			--
9	Evapotranspiration beds and subsurface drain fields	--			--			--			--			--
		30-Day Average			7-Day Average			Daily Maximum			Single Grab			
		CBOD ₅	TSS	NH ₃ -N	CBOD ₅	TSS	NH ₃ -N	CBOD ₅	TSS	NH ₃ -N	CBOD ₅	TSS	NH ₃ -N	DO MIN
Enhanced														
2N	Secondary with Nitrification	10	15	3	15	25	6	25	40	10	35	60	15	4
2N1	Secondary with Nitrification	10	15	2	15	25	5	25	40	10	35	60	15	4

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